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10/520,680	01/11/2005	Zenichirou Shida	OGW-0344	9386
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Patrick G. Burns Greer, Burns & Crain, Ltd. Suite 2500 300 South Wacker Drive Chicago, IL 60606				
EXAMINER				
MAKI, STEVEN D				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,680

Applicant(s)

SHIDA, ZENICHIROU

Examiner

Steven D. Maki

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-7, 13 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 16 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 1, 4-7, 13 and 17-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 1791

- 1) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 2) Claims 4-7, 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 4, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is the combination of the subject matter of claim 1 and the subject matter of claim 4. Claim 1 (consisting of radius R1 and radius R2) is directed to the species of figure 2 whereas claim 4 (radius R1, radius R2 and radius R3) is directed to the species of Figure 3. The original disclosure fails to reasonably convey combining these different species to arrive at claim 4 dependent on amended claim 1.

As to claims 5-7, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is the combination of the subject matter of claim 1 and the subject matter of claim 5. Claim 1 (consisting of radius R1 and radius R2) is directed to the species of figure 2 whereas claim 5 (radius R2', radius R1, radius R2) is directed to the species of

Figure 5. The original disclosure fails to reasonably convey combining these different species to arrive at claim 5 dependent on amended claim 1.

As to claim 17, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is the combination of the subject matter of claim 15 and the subject matter of claim 17. Claim 15 (radius R2', radius R1, radius R2 and radius R3) is directed to the species of figure 5 whereas claim 17 (consisting of radius R1 and radius R2) is directed to the species of Figure 2. The original disclosure fails to reasonably convey combining these different species to arrive at claim 17 dependent on new claim 15.

As to claim 18, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is the combination of the subject matter of claim 15 and the subject matter of claim 18. Claim 15 (radius R2', radius R1, radius R2 and radius R3) is directed to the species of figure 5 whereas claim 18 (consisting of radius R1, radius R2 and radius R3) is directed to the species of Figure 3. The original disclosure fails to reasonably convey combining these different species to arrive at claim 18 dependent on new claim 15.

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4) Claims 4-7, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because the subject matter of claim 4 (radius R1, radius R2 and radius R3) is inconsistent with the subject matter of claim 1 (consisting of radius R1 and radius R2).

Claim 5 is indefinite because the subject matter of claim 5 (radius R2', radius R1, radius R2) is inconsistent with the subject matter of claim 1 (consisting of radius R1 and radius R2).

Claim 17 is indefinite because the subject matter of claim 17 (consisting of radius R1 and radius R2) is inconsistent with the subject matter of claim 15 (radius R2', radius R1, radius R2 and radius R3).

Claim 18 is indefinite because the subject matter of claim 18 (consisting of radius R1, radius R2 and radius R3) is inconsistent with the subject matter of claim 15 (radius R2', radius R1, radius R2 and radius R3).

5) Claims 4-7, 17 and 18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 4-7 remove the limitation of consisting of radius R1 and radius R2 found in claim 1.

Claims 17 and 18 remove the limitation of radius R2', radius R1, radius R2 and radius R3 found in claim 15.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7) **Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 105 (JP 11-001105) in view of Kogure et al (US 5,355,922), Meyer (US 2005/0061410) and Europe 599 (EP 728599).**

Japan 105 discloses a pneumatic tire having a tread comprising four straight circumferential main grooves 14 separating five block rows ("land portions"). The tire has a size such as 225/50R16, which one of ordinary skill in the art would have readily understood as having a radial construction and being a passenger car tire size. See paragraph 28. Japan 105 teaches forming the land portion 18 (located second when counted from the outer side of a vehicle when the tire is mounted thereon) such that the land portion 18 has a convex ground contact surface. The profile of the tread is made to curve inwardly such that the distance from the tread surface curve M and the outer edge of the second land 18 is alpha. See abstract, figure 1 and figure 2. The distance alpha directly corresponds to the claimed depth d. Japan 105 teaches

$$R = 1 - 1.25 \alpha - (1 - \beta) - (1 - \gamma) - 0.017 \theta$$

wherein R is between 0.3 to 0.7. See paragraph 24. In other words, Japan 105 desires $R = 30\text{-}70\%$. Japan 105 teaches that stability of the tire is increased and deflection

abrasion of the tire is prevented. See abstract. Japan 105 shows using alpha of about 0.2 mm to 0.6 mm to obtain a R of 30-70%. See figure 7. As can be seen from figure 2, "the vehicle outer sidewall surface of the second land portion has a height that is less than that of the wall of the main groove that faces the vehicle outer sidewall surface of the second land portion". Japan 105 illustrates the distance alpha as being a relatively small percentage of the groove depth (figure 2), but is silent as to numerical values for groove depth.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide the main grooves in the tread of Japan 105's pneumatic radial tire such that the depth d is 2-10% of the main groove depth D since Kogure teaches that conventional pneumatic radial tires passenger car tires have a groove depth of 8-11 mm. In his invention, Kogure teaches using a groove depth of 6-8.5 mm. Kogure notes that grooves having a depth less than 6 mm are no longer suited for practical use. See column 1 lines 5-10 and column 4 lines 1-10 of Kogure. One of ordinary skill in the art would have been motivated to use a groove depth such as 8 mm for Japan 105's main grooves to obtain a pneumatic radial passenger car tire suited for practical use. As previously mentioned, Japan 105 teaches a distance alpha (depth d) of 0.2 mm to 0.6 mm. When using a main groove depth of 8 mm and a distance alpha (depth d) of 0.2-0.6 mm, therefore, the ratio $d/D = 0.025-0.075$. In short, the depth d is 2.5 to 7.5% groove depth D. The range 0.025 to 0.075 falls within the claimed range of 0.02 to 0.10.

Furthermore, it would have been obvious to one of ordinary skill in the art to form Japan 105's tire such that (a) the tread comprises land portions each having a ground

contact surface comprising a first circular arc having a single radius curvature radius in tire meridian cross section and (b) land portion 18 has the claimed first circular arc and the claimed second circular arc / curved line since (1) Japan 105 teaches that the ground contact surface of land portion 18 is made to curve inwardly away from curve M such that the distance from the tread surface curve M and the outer edge of the second land 18 is alpha and (2) Meyer teaches using different radii (e.g. TR1, TR2) to form the profile of a pneumatic tire such that the radii decrease from the tread center toward the tread ends to improve properties such as stability and handling; it being noted that Meyer (figure 1) teaches changing the ground contact surface from the first larger radius TR1 to the second smaller radius TR2 at the land portion located second when counted from the outer side of a vehicle when the tire is mounted thereon. Hence, Meyer teaches that curve M of Japan 105 can and should be defined a relatively large "first radius" such as radius TR1. When considered as a whole, Japan 105 and Meyer suggest defining ground contact surface at the inner side of land portion 18 using the large first radius and defining the ground contact surface at the outer side of land portion 18 using a smaller second radius (in contrast to either using only one radius smaller than that for curve M to define land portion 18 or using equal radii with different origins to define land portion 18). The teaching to obtain the claimed depth d comes from Japan 105's teaching to profile land portion 18 so as to define distance alpha in mm such that the resulting tire increases stability and prevents abrasion. With respect to R1 being 2-10 times R2, Meyers teaches a first radius TR1 being 1.05 to 10 times the second radius TR2.

With respect to d being 1-15% W , it would have been obvious to one of ordinary skill in the art to provide the main circumferential grooves of Japan 105's pneumatic tire with a groove width such that depth d (distance α) is 1-15% of the groove width since Europe 599 discloses a conventional pneumatic tire as having a groove width of 8 mm and a groove depth of 8 mm (Table 1). As previously mentioned, Japan 105 teaches a distance α (depth d) of 0.2 mm to 0.6 mm. When using a main groove width of 8 mm and a distance α (depth d) of 0.2-0.6 mm, therefore, the ratio $d/W = 0.025-0.075$. In short, depth d is 2.5 to 7.5% groove width W . The range 0.025 to 0.075 falls within the claimed range of 0.02 to 0.10.

As to claim 13, it would have been an obvious alternative to one of ordinary skill in the art to provide the tread of Japan 105's passenger car tire with three circumferential grooves (left groove, center groove, right groove) and four land portions since it is taken as well known / conventional in the tire art to provide the tread of a pneumatic passenger car tire with either three (left groove, center groove, right groove) and four land portions (e.g. block rows) or four circumferential grooves and five land portions (e.g. block rows).

Allowable Subject Matter

8) Claims 15-16 and 19-21 are allowed.

The prior art including Japan 105, Kogure, Meyer and Europe 405 fail to render obvious reconfiguring the second land portion of Japan 105 so as to arrive at the tire of claim 15, which requires $R1 > R2 > R2' > R3$.

Remarks

9) Applicant's arguments filed 5-21-08 have been fully considered but they are not persuasive.

Applicant argues that the object of Japan 105 differs from the object of the invention. This argument is not persuasive since (1) Japan 105's second land, like applicant's second land, has an asymmetrical curved surface and (2) Japan 105 and applicant share the common object of preventing wear.

Applicant argues that Japan 105 does not teach that uneven wear can be suppressed by using only the depth d (distance α). This argument is not commensurate in scope with the claims and is therefore not persuasive since claims 1 and 13 fail to require suppressing uneven wear using only depth d .

Applicant argues that the surface of Japan 105's land 18 is formed by a curve whereas the invention has connected circular arcs having different radii. This argument is not persuasive since connected circular arcs having different radii form a curve.

Applicant argues that Japan 105 does not contain a disclosure of depth d being 2-10% groove depth D and depth d being 1-15% groove width W . This argument is not persuasive. Japan 105 teaches a depth d of 0.2-0.6 mm. When using the well known and conventional groove depth D of 8 mm and groove width W of 8 mm (as evidenced by Kogure et al and Europe 599) for Japan 105's tire, the depth d is 2.5-7.5% groove depth D and the depth d is 2.5-7.5% groove width W .

Applicant argues that Japan 105 does not teach radius $R1$ being 1.05-10 times radius $R2$. More properly, Japan 105 teaches a curved profile for second land 18 and

Meyer teaches forming a curved profile for a second land using two radii wherein one radius is 1.05-10 times the other radius.

Applicant argues that the object of Meyer et al differs from the present invention. Applicant further argues that there is no motivation to combine Japan 105 and Meyer et al. These arguments are not persuasive. Japan 105 and Meyer et al share the common feature of a curved profile for a tread surface of a second land. This correspondence in disclosed structure renders obvious defining the curved profile of the second land of Japan 105 using two radii as disclosed by Meyer et al.

10) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
August 18, 2008